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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/662,785

09/15/2003

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358261-991100

9521

26379 7590 03/13/2009
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EXAMINER

WALKER, KEITH D

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

03/13/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/662,785	Applicant(s) HALL ET AL.	
	Examiner KEITH WALKER	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25, 26 and 28-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25, 26 and 28-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/11/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/11/09 has been entered.

Remarks

Claims 25, 26 & 28-40 are pending examination as discussed below.

Information Disclosure Statement

The information disclosure statement filed on 2/11/09 has been placed in the application file and the information referred to therein has been considered as to the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25, 26 & 28-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 25, the limitation, "mixing a solution of an alkali salt of either a C₆-C₃₀ fatty acid or a C₆-C₃₀ alkyl sulfonic

acid...wherein the anode composition is a mixture of zinc hydroxide and an insoluble salt of a C₆-C₃₀ fatty acid..." is indefinite because it is unclear how the final mixture can include a salt of a C₆-C₃₀ fatty acid if in the first part a C₆-C₃₀ alkyl sulfonic acid is chosen. Since applicant has deleted the limitation choice of "C₆-C₃₀ alkyl sulfonic acid" from other dependent claims, it will be presumed that the first recitation of "a C₆-C₃₀ alkyl sulfonic acid" was also meant to be deleted and the claim will be interpreted as only relating to C₆-C₃₀ fatty acids and not C₆-C₃₀ alkyl sulfonic acids.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 25, 26 & 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,824,434 (Kawakami) in view of US Patent 4,297,249 (Przybyla).

Kawakami teaches the process of making an anode electrode by adding a precipitated zinc hydroxide with a salt of an acid such as sodium phosphate (18:1-25).

Kawakami is silent to using a fatty acid or graphite in making the electrode.

Przybyla teaches adding an alkali metal salt of a fatty acid, including the metal of potassium and a fatty acid of stearic acid, forming potassium stearate (5:26-33).

Graphite is added to the mixture to act as a lubricant (6:65-68). The metal salt of the

fatty acid promotes a reduction of oxygen evolution and also acts as a lubricant by lowering the internal friction of the powder.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the electrode mix of Kawakami with the alkali metal salt of a fatty acid and graphite as taught by Przybyla to aid in the lubrication of the powder as it is formed, which promotes a more consistent and uniform density to the electrode.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to add alkali metal salt to the first precipitate of zinc hydroxide before adding the solution of a salt of an acid, since it has been held that the selection of reversing the steps of a prior art process is *prima facie* obvious; the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results; and any order in mixing ingredients is *prima facie* obvious (MPEP 2144.04(IV) (C)).

2. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,824,434 (Kawakami) in view of US Patent 4,297,249 (Przybyla) as applied to claim 30 above, and further in view of US Patent 4,086,392 (Mao).

The teachings of Kawakami and Przybyla as discussed above are incorporated herein.

Kawakami is silent to using zinc sulfate as the acid salt.

Mao teaches adding zinc sulfate to the electrode in order to improve the float current. Addition of the zinc sulfate decreases the float current during constant voltage overcharge (Abstract; 3:25-55).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the acid salt of Kawakami with the zinc sulfate of Mao to improve the battery performance by decreasing the float current.

3. Claims 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,824,434 (Kawakami) in view of US Patent 4,297,249 (Przybyla) as applied to claim 30 above, and further in view of US Patent 4,146,685 (Tucholski)

The teachings of Kawakami and Przybyla as discussed above are incorporated herein.

Kawakami and Przybyla are silent to using zinc stearate.

Tucholski also teaches the use of stearates, such as zinc and calcium, as a lubricant or stabilizer and adds the stearates in the amount of about 0.5% (Table 1). Only a minor amount of the stearate is added to mixture to improve the flow and molding of the electrode but not detract from the electrical properties by lowering the density of the active material. Furthermore, it would have been obvious to one having ordinary skill at the time of the invention to vary the amount of the stearate to find the amount needed to promote proper electrode molding and formation, since it is held that discovering an optimum value of a result effective variable involves only routine skill in the art (*MPEP 2144.05*).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the electrode mixture of Kawakami and Przybyla with the amounts presented in Tucholski to improve the molding and forming of the electrode without diminishing the electrical density of the electrode.

4. Claims 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,824,434 (Kawakami) in view of US Patent 4,297,249 (Przybyla) and US Patent 4,146,685 (Tucholski) as applied to claim 32 above, and further in view of US Patent 5,688,616 (Yamawaki) and US Patent 4,086,392 (Mao).

The teachings of Kawakami, Przybyla, Tucholski and Mao as discussed above are incorporated herein.

Kawakami is silent to using calcium nitrate and calcium stearate.

Tucholski also teaches the use of stearates, such as zinc and calcium, as a lubricant or stabilizer and adds the stearates in the amount of about 0.5% (Table 1). Only a minor amount of the stearate is added to mixture to improve the flow and molding of the electrode but not detract from the electrical properties by lowering the density of the active material. Furthermore, it would have been obvious to one having ordinary skill at the time of the invention to vary the amount of the stearate to find the amount needed to promote proper electrode molding and formation, since it is held that discovering an optimum value of a result effective variable involves only routine skill in the art (*MPEP 2144.05*).

While Tucholski teaches the use of the calcium stearate, the use of calcium nitrate as a precursor is not taught. As discussed above, Mao teaches using zinc sulfate in the electrode. Yamawaki teaches it is known in the art that calcium nitrate and zinc sulfate are substitute salts for use in a battery (7:47-51).

It would have been obvious to one skilled in the art at the time of the invention to substitute the calcium nitrate for the zinc sulfate and then with the stearic acid, produce the calcium stearate, since it is held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (MPEP 2144.07)

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the electrode mixture of Kawakami and Przybyla with the amounts presented in Tucholski to improve the molding and forming of the electrode without diminishing the electrical density of the electrode.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection as necessitated by amendment.

Applicant's arguments filed 2/11/09 have been fully considered but they are not persuasive.

As discussed above, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. As the steps of the prior art are equivalent to the claimed invention and come from the same field of

endeavor as the claimed invention, the claimed process is obvious over the teachings of the prior art, absent new or unexpected results.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH WALKER whose telephone number is (571)272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Keith Walker/
Examiner, Art Unit 1795